



**THE COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION**

**Draft Staff Recommendation
For Water Resources Commission Discussion
13 April 1995**

**Metrowest Tunnel Dewatering
Request for Determination of Insignificance**

On February 3, 1995, the Water Resources Commission (WRC) received a request for Determination of Insignificance under the Interbasin Transfer Act (ITA)(M.G.L. Chapter 21 ss. 8B-8D) from the Massachusetts Water Resources Authority (MWRA) for the Metrowest Tunnel Dewatering project. This project proposes to transfer an annualized average of less than 0.75 mgd of water, which will result from bedrock infiltration during the excavation of the Charles River basin portion of the Metrowest Tunnel. Discharge will be to the Sudbury River subbasin of the Concord River basin. The transfer is to be temporary, occurring only during the construction phase of the project. None of the transferred water will be used for water supply purposes.

BACKGROUND

On July 8, 1991, the Water Resources Commission voted that the Metrowest Tunnel project (previously known as the Sudbury Tunnel project) was exempt from Commission review under the Interbasin Transfer Act pursuant to 313 CMR 4.02(j) of the Interbasin Transfer regulations, which exempts projects whose "sole purpose is to provide redundancy, provided that any increase in capacity cannot be used to increase the ability to transfer water, on an annualized basis...". (See attached letter to John Shawcross, dated July 9, 1991). The Metrowest Tunnel is designed to provide redundancy for the Hultman Aqueduct and Southborough Tunnel, and will replace the Weston Aqueduct, which currently serves the low pressure areas of the system. The new tunnel is designed to carry 500 mgd. Under normal operating conditions, the Hultman Aqueduct would carry 100 mgd and the new tunnel would carry 165 mgd. When the Hultman is shut down for repairs, maintenance, or emergency conditions, the Metrowest Tunnel would be able to provide capacity for the entire flow to the metropolitan area.

The Metrowest Tunnel project is currently undergoing MEPA review. A Supplemental Environmental Impact Report was submitted to MEPA in June 1994.

CURRENT PROJECT

The Metrowest Tunnel, a 14 foot diameter tunnel, will be drilled through bedrock from the Cosgrove Tunnel in Marlborough to the Norumbega Reservoir in Weston, approximately 200 to 400 feet below the surface. The project also includes a 12 foot diameter tunnel from the Norumbega Reservoir to the City Tunnel in Weston (Figure 1). The current project is directly related to the construction of this tunnel, however the transfer of water associated with the dewatering proposal is independent of the transfer of water to be conveyed via the completed tunnel.

The water conveyed via the completed Metrowest Tunnel will be distributed throughout the MWRA system on a permanent basis, as it is now, for water supply purposes. The tunnel dewatering project involves a maximum daily transfer of 0.75 mgd of construction-related bedrock inflow, which will be transferred on a temporary basis from the Charles River basin. This water would flow downgradient from Shaft 5 to Shaft L, a 6.6 mile segment. 3.6 miles of this segment lie beneath the Charles River basin (Figure 2). Bedrock found in this segment of the tunnel is characterized as sound granitic rock. It is anticipated that there will be limited ground water flowing from overlying sediments into the bedrock, therefore, it is anticipated that this transfer should not have an impact on surface water and related resources. Should a major fracture that allows substantial water inflow be encountered during excavation, the tunnel segment could be grouted to minimize this inflow. This mitigation measure will insure that tunnel construction will have a minimal impact on surface water resources.

The transferred water will then be treated, under the provisions of an NPDES permit, and discharged to the Sudbury River, a subbasin of the Concord River basin. None of this water will be used for water supply purposes. It is estimated that the duration of the transfer is to be from 1.5 to 2.5 years. The tunnel will then be grouted and permanently lined in order to convey treated drinking water to the MWRA system.

The MWRA is requesting that the WRC find this proposal to be insignificant under the ITA, based on 313 CMR 4.02 of the Interbasin Transfer regulations which state that the "Commission may, upon request, consider an increase to be insignificant when the transfer is to be temporary, of short duration and conducted to facilitate the construction, maintenance or repair of a public utility...".

EVALUATION OF THE CURRENT PROJECT

The request for determination of insignificance has been reviewed by staff from DEM's Office of Water Resources, DEP's Office of Watershed Management and Division of Water Supply, and DFWELE's Division of Fisheries and Wildlife, Division of Marine Fisheries, and Riverways Program. Comments received are attached.

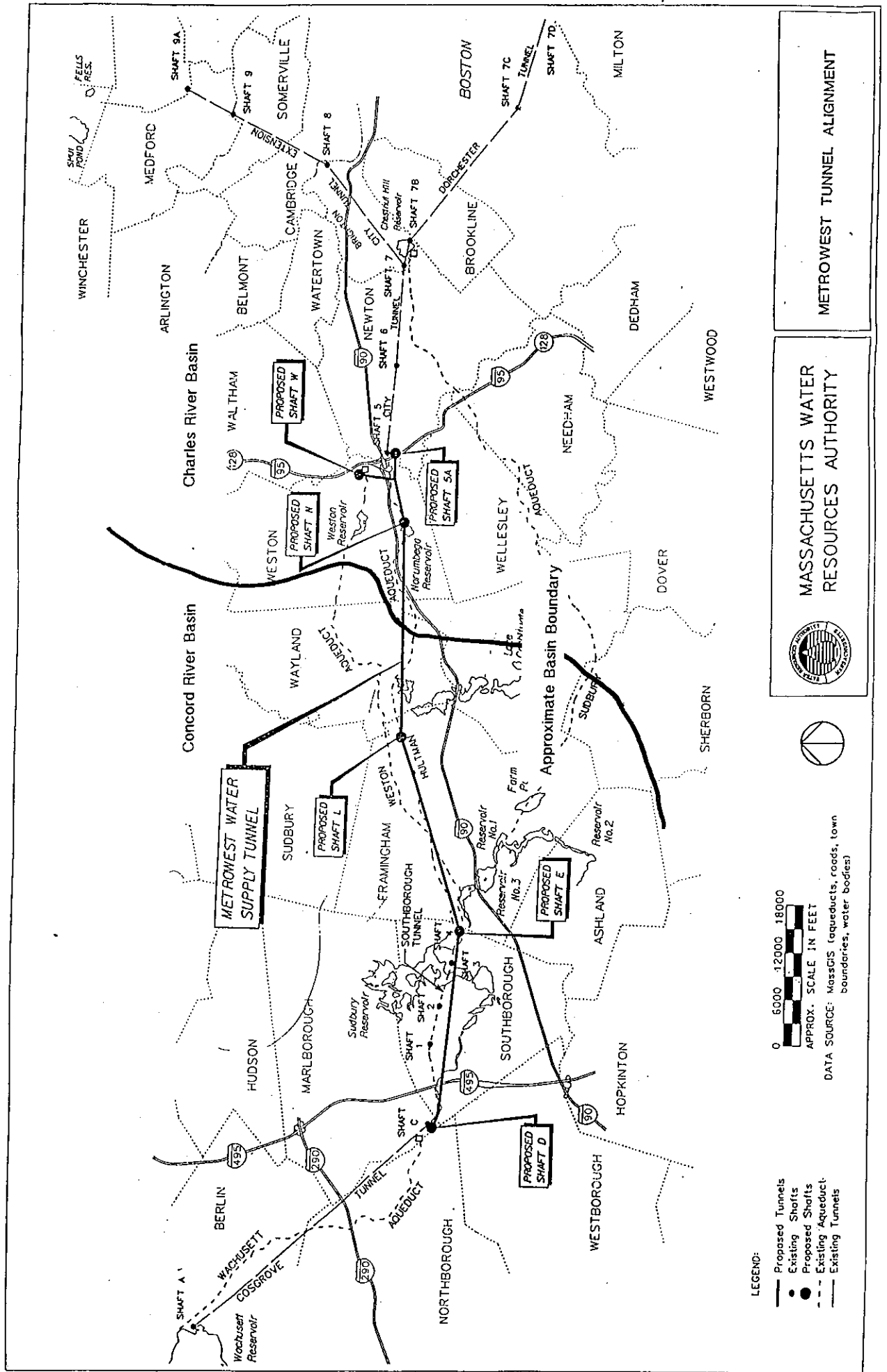
Because water contained in bedrock is generally unavailable for surface water flow, the requirement for the proponent to provide the period of record hydrograph was waived. 313 CMR 4.04(4) outlines the criteria the Commission shall consider when making a determination of insignificance. These criteria, and how the project meets them, follow:

CRITERION	PROJECT MEETS?
(a) The proposed action shall not facilitate an increase over 1 mgd	Yes
(b) The increase on an annualized basis is less than 1 mgd, is temporary, and for a purpose cited in the definition of insignificant increase	Yes
(c) The additional flow to be withdrawn is in all cases less than 5% of the instantaneous flow as measured at an appropriate point of the donor river...	Not applicable to this project
(d) The 95% exceedance flow, or the 7Q10 flow, will not be diminished	Not applicable to this project
(e) Special resource values such as endangered species,..., will not be adversely affected	Yes
(f) The Commission shall consider the cumulative impacts of all past, authorized or proposed transfers on streamflows in the donor basin	The Charles River basin is subject to many out-of-basin transfers. This project will transfer only bedrock inflow, on a temporary basis. After excavation is complete, in approximately 1.5 to 2.5 years, and the tunnel has been lined (another 1.5 to 2 years), this transfer will cease.

STAFF RECOMMENDATION

Based on the information provided by the MWRA, on the comments received and on the criteria contained in 313 CMR 4.04(4), **STAFF RECOMMENDS THAT THE WRC FIND THIS PROJECT TO BE INSIGNIFICANT UNDER THE INTERBASIN TRANSFER ACT.** This recommendation is made with the understanding that the project will be temporary and that the MWRA will take all mitigation measures necessary to minimize the amount of water flowing into the excavated tunnel, including emergency grouting, if necessary.

Figure 1



MetroWest Tunnel - Vertical Profile

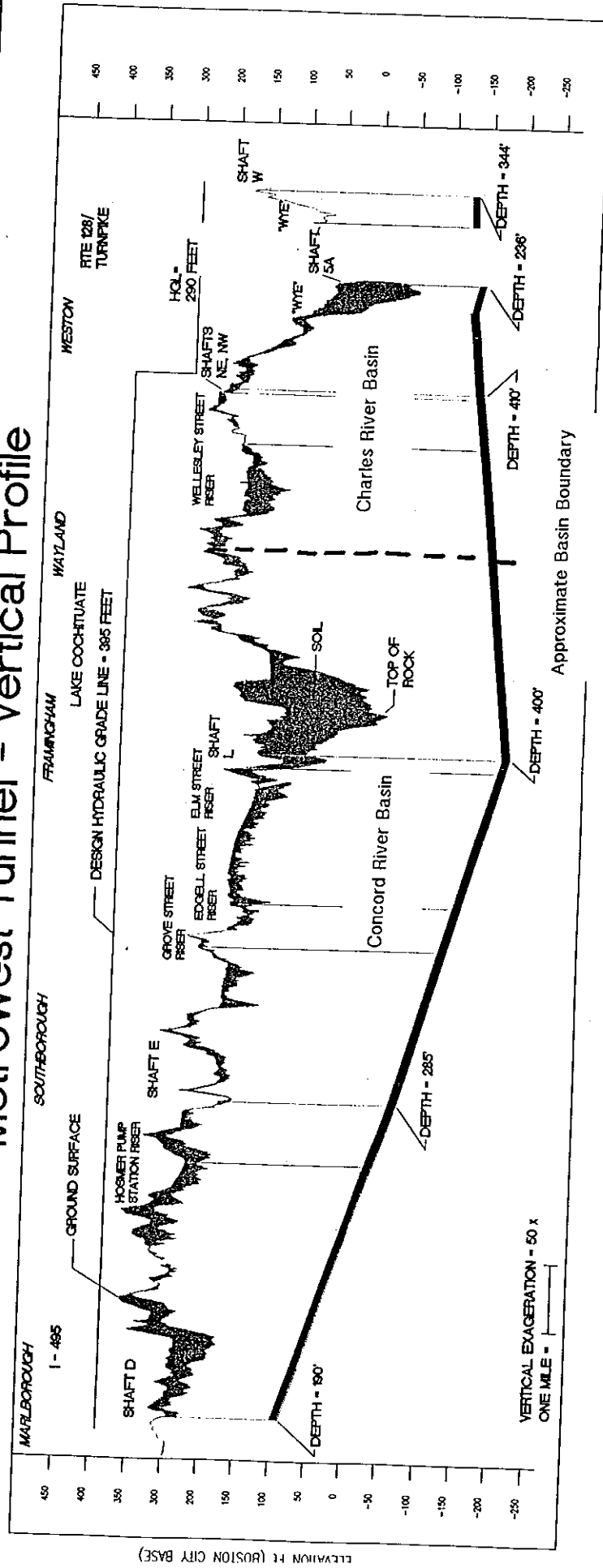


FIGURE 2